

LUZIOLA BAHIENSIS (POACEAE): NEW TO FLORIDA

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ABSTRACT

The occurrence of three species of *Luziola* in the United States is reviewed; *L. fluitans* is widespread, whereas *L. peruviana* and *L. bahiensis* are limited in range. Collection data and a distribution map are given for the latter two, plus a detailed description of the Florida plants of *L. bahiensis*.

RESUME

Se revisa la presencia de tres especies de *Luziola* en los Estados Unidos: *L. fluitans* está ampliamente distribuida, mientras que *L. peruviana* y *L. bahiensis* tienen una distribución más limitada. Se dan datos de la recolección y un mapa de distribución para las dos últimas, además de una descripción detallada de las plantas de Florida pertenecientes a *L. bahiensis*.

KEY WORDS: Poaceae, *Hydrochloa*, *Luziola*, Florida

The genus *Luziola* comprises 12 aquatic or wetland species, three of which occur in the southeastern United States. The most widespread here, ranging from North Carolina to Texas, is *L. fluitans* (Michx.) Terrell & H. Robinson. Until 1974, this common species was known as *Hydrochloa caroliniensis* Beauv. Terrell and Robinson placed *Hydrochloa caroliniensis* in synonymy under *Luziola*, and Tucker (1988) followed their treatment.

The other two species known to occur in the United States, *L. peruviana* Gmel. and *L. bahiensis* (Steud.) Hitchc., are local and infrequently encountered. The former was probably introduced with ballast and occurs in weedy settings. The latter inhabits rather undisturbed riparian sites; specimens collected in 1859 were the basis for *L. alabamensis* Chapm. which is synonymous with *L. bahiensis*. Specimen citations for both of these rarer species are given here, and their distribution is mapped (Fig. 1).

The senior author found an unusual aquatic grass unknown to him during field surveys at Eglin Air Force Base in western Florida. It was not represented in Godfrey and Wooten (1980) or in Clewell (1985), and time did not allow additional literature search, so a specimen was sent to the junior author for

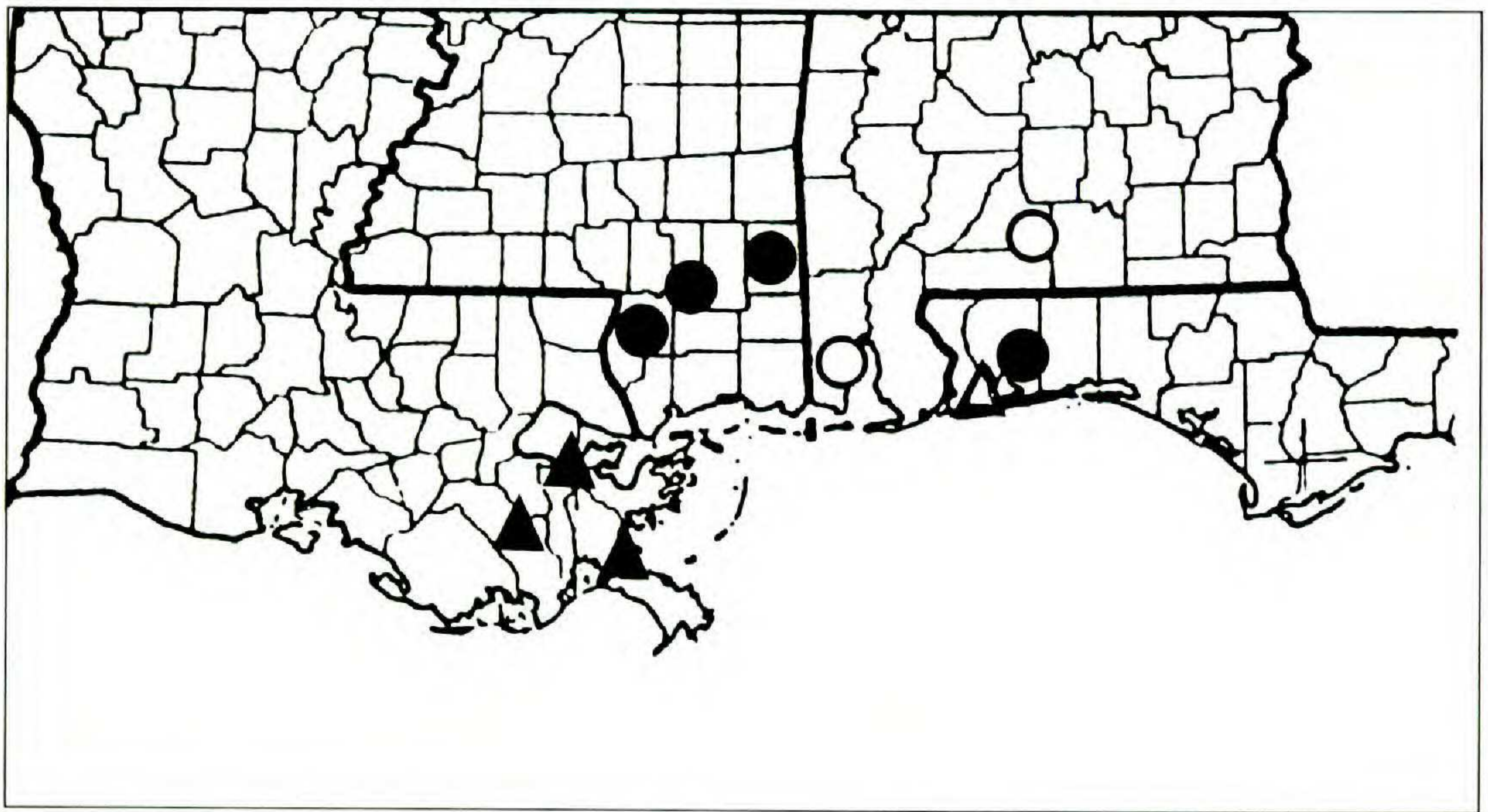


FIG. 1. Distribution of selected *Luziola* species in the southeastern United States; closed symbols are recent collections, and open symbols represent historical collections (over 90 years old). Circles = *L. bahiensis*; triangles = *L. peruviana*.

identification so that more could be collected if necessary. This represents the first report for *L. bahiensis* in Florida. Because this species is poorly known and the Florida plants differ somewhat from published descriptions (Hitchcock 1950, Swallen 1965), a detailed description is given here.

Florida plants of *L. bahiensis* are monoecious and either rooted in water (*Anderson 13839*) with short, delicate, naked rhizomes, thus forming densely compacted floating mats with erect, emergent leaves and flowering culms (appearing turf-like until stepped upon) or rooted in mud (*Anderson 13889*) with long naked rhizomes and leafy stolons, with the basal leaves and flowering culms flaccid and floating on the water; leaves on stolons to 6 cm long, 2–3 mm wide, their sheaths shorter than the internodes. Basal leaves several, to 39 cm long with long acuminate tips, 3–4 (4.5) mm wide, erect and emergent, considerably overtopping inflorescences. Flowering culms erect, each bearing one leaf up to 26 cm long with ligule 1–1.3 mm long. Staminate culms 15–20 cm long, terminal; staminate inflorescence 4–6 cm long, racemose, the pedicels spreading, single-flowered; lemmas 4–5 mm long, smooth, nerves 7–9, faint or invisible; paleas 4 mm long; stamens 6, anthers 2–2.5 mm long. Pistillate culms (8) 10–20 cm long, axillary; pistillate inflorescence 4–8 cm long, paniculate, the pedicels spreading or usually tightly appressed, each with 1–3 flowers; glumes absent; lemmas 3.5–4 (4.5) mm long, prominently 11–13 nerved (appearing as compacted, somewhat wavy longitudinal corrugations), ovate to lanceolate; lemma and palea nearly equal in length and loosely enveloping the lenticular, ovate fruit (achene rather than caryopsis, see Terrell and Robinson 1974) with short, stout stylopodium bearing persistent, spreading style branches.

The floating habit of this species (*Anderson 13839*) has not been reported previously. This good-sized population (ca. 8 × 20 dm) was not evident during the second visit to the site; the plants were apparently washed downstream by heavy rain that occurred just after the first visit. The genus *Hydrochloa* was distinguished from *Luziola* in that plants of the former were floating aquatics that had racemose inflorescences rather than paniculate ones (Hitchcock 1950, Hall 1978). Terrell and Robinson (1974) noted that *L. fragilis* Swallen was a floating aquatic with racemose inflorescences, and they therefore merged the genera. The report here of the floating habit in *L. bahiensis* (which has racemose staminate inflorescences) adds further weight to the inclusion of *Hydrochloa* in the older genus *Luziola*.

Specimens of *L. bahiensis* examined: ALABAMA. Conecuh Co.: Brooklyn, Oct 1859, *J.F. Beaumont s.n.* (MO, US). Mobile Co.: floating stems 2–3 ft long, inundated sandy borders of rivulets in the lower pine region near the coast, Langdons Station, 10 Jun 1884, *C. Mohr s.n.* (US), 16 Jun 1884, *C. Mohr s.n.* (ALU, NY, US), shallow brooks, pine barrens, Mobile, Jun 1886, *C. Mohr s.n.* (MO, NY). FLORIDA. Santa Rosa Co.: floating mats along edge of Weaver Creek at Eglin Range Road 736 bridge, T1N, R27W, SW1/4 of NW1/4 Sec 35, ca. 7.5 air mi SE of Milton, 30 Jul 1992, *L. C. Anderson 13839* (FLAS, FSU, MO, NY), rooted below water surface in mud of stream bank, Weaver Creek 10 m upstream from bridge, 14 Aug 1992, *L. C. Anderson 13889* (FSU, MO, NY, USF, VDB). MISSISSIPPI. Forrest Co.: shallow water, mucky bottom, Hwy 49 just S of Maxie, 25 Jun 1972, *F. H. Sargent 10517* (MO); small lake E of Hwy 49, Maxie, 25 Jun 1972, *K. Rogers 8384* (Univ. S. Miss.); shallow water of stream, 2–3 mi N of Fruitland Park on old Hwy 49, 25 Jun 1972, *K. Rogers 8385* (VDB); small stream ca. 2 mi N of Maxie on old Hwy 49, 25 Jun 1972, *K. Rogers 8386* (VDB); Mixon's Swamp, 0.5 mi S of Maxie on Hwy 49, 14 Oct 1975, *J. W. Wooten 2837* (FSU); Beaver Dam at Hwy 49 crossing, 2 mi N of Maxie, 13 Oct 1976, *J. W. Wooten 2967* (Univ. S. Miss.). Greene Co.: shallow water of open pond and tupelo swamp, 0.3 mi N of Leaf Church on Hwy 57, 25 Sep 1972, *K.E. Rogers 8742-D* (US). Pearl River Co.: Poplarville, 7 Jul 1891, *S.M. Tracy s.n.* (NY).

Luziola peruviana differs from *L. bahiensis* in being generally a more robust plant with staminate and pistillate panicles on the same culm; the staminate spikelets are longer and the pistillate spikelets are shorter than those of *L. bahiensis*.

Specimens of *L. peruviana* examined: FLORIDA. Escambia Co.: miry grounds near Pensacola, 12 Aug 1901, *A. H. Curtis 6871* (MO, US). LOUISIANA. Lafourche Parish: floating in 2–3 ft water, canal 3 mi S of Lockport, 11 Jun 1981, *G.N. Moutz 5253 et al.* (LSU, NO); canal S of Lake Fields, E of Lake Long, 29 Jun 1981, *G.N. Moutz 5272 et al.* (LSU, NO). Orleans Parish: ponds near Mississippi River, vicinity of New Orleans, Sep 1901, *R.S. Cocks s.n.* (NO, US); Audubon Park, New Orleans, 9 May 1935, *W.T. Penfound s.n.* (NO); Audubon Park, 29 May 1935, *W.T. Penfound s.n.* (NO); Audubon Park, 7 Nov 1940, *J.W. Lancaster s.n.* (NO); shallow pond in park, Tulane, New Orleans, 13 Jun 1939, *W.A. Silveus 4234* (TEX, US). Plaquemines Parish: miry places along Mississippi River, July 1882, *A.B. Langois s.n.* (US); in low miry places, Pointe a la Hache, 5 Aug 1884, *A.B. Langois s.n.* (US); in ditches and miry places, Point a la Hache, 13 Sep 1885, *A.B. Langois 5* (MO, US).

The three species differ in their origins and mode of dispersal in the United States. *Luziola fluitans* is native and scattered over a wide range of aquatic habitats. *Luziola peruviana* was apparently introduced inadvertently by man and is found in coastal and/or ruderal habitats.

Luziola bahiensis could be native, or it could have introduced naturally as seed or other propagules through tropical storms and become naturalized. It inhabits rather pristine inland wetlands. Weaver Creek is a clear, seemingly unpolluted stream containing *Orontium* and *Sphagnum* in addition to the *Luziola*; it is bordered by *Acer*, *Chamaecyparis*, *Cliftonia*, *Cyrilla*, *Magnolia*, *Nyssa*, and *Taxodium*. Many threatened or endangered species occur along its banks, such as: *Drosera intermedia* Hayne, *Lilium iridollae* Henry, *Peltandra sagittifolia* (Michx.) Morong, *Platanthera blephariglottis* (Willd.) Lindl., *P. cristata* (Michx.) Lindl., *Sarracenia leucophylla* Raf., and *S. rubra* Walt. The stream system in Forrest County, Mississippi, is also clear water and relatively unpolluted (Wooten, pers. comm.).

ACKNOWLEDGMENTS

This discovery was part of a survey for rare and endangered plant species at Eglin Air Force Base, logistically supported by Florida Natural Areas Inventory and The Nature Conservancy under contract M67004-91-D-0010/Q301 from the U.S. Department of Defense.

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